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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,964	07/30/2001	Herbert Martin Wilson	N1205-012	9384
6449	7590	05/03/2002		
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			EXAMINER HELMER, GEORGIA L	
			ART UNIT 1638	PAPER NUMBER 3

DATE MAILED: 05/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/917,964	WILSON ET AL.
	Examiner Georgia Helmer	Art Unit 1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 30 July 2001.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 35-42 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 35-42 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Status of the Application*

1. This is a continuing application, filed 7/30/01, of parent case 09/203,679, filed 12/01/98.
2. Claims 35-42 are pending.
3. The preliminary amendment dated 7/30/01 has been entered.

### *Specification*

4. The specification is objected to because of the following informalities: The margins in the specification are too small and the bottom margin is so small as to possibly eliminate the last line of text. A substitute specification is required.

The status of all cited US patent applications must be included and updated as applicable.

Table I, pages 12 and 13 need to be resubmitted because the columns are not aligned and the recipes are unclear.

Correction is required.

### *Claim Rejections - 35 USC § 112 second paragraph*

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1638

6. Claims 35-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 35,

- “transforming lines of corn” is unclear. Tissue or cells can be transformed; lines are multiple individuals and cannot, as such, be transformed.
- In (a): The term “gene” implies a DNA sequence that exists in nature and includes coding and noncoding regions, as well as all regulatory sequences associated with expression. This does not appear to be applicant’s intention. It is suggested that “gene” be amended to “a polynucleotide encoding a protein of interest”.
- In (b and c), both “antibiotic” and “selective agent” are recited and it is unclear how these differ, as antibiotics are a selective agent. All recitations of this language are also rejected.
- In (c), “resulting tissue” lacks antecedence;
- In (d), “resulting tissue” lacks antecedence; “a” selective agent should be “”said” selective agent, for proper antecedence.
- In (e), “with growing type II callus” is unclear; is “growing “ the criterion for selection or is it an inherent property of the recited type II callus? Does “with” mean “having” or “and”?

Claims 35, 37, 38 and 42 are incomplete claims since the desired product of the method is not produced in the final step.

Art Unit: 1638

In claim 41, The Office interprets concentration terms like "mg/L and g/L" to be the final concentration in the medium.

The "heat shock treatment" conditions of claim 42 are unclear. How is this carried out? Heat shock treatments for bacteria are known in the art, but not for plants.

Clarification and/or correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 35, 38, 39, and 40 rejected under 35 U.S.C. 102(e) as being anticipated by Hansen, G. (US # 6,162,965) filed June 2, 1997, issued December 19, 2000.

Hansen teaches

- a method for transforming corn (9<sup>th</sup> column, lines 6-16),
- comprising the steps of cocultivating an immature embryo (8<sup>th</sup> column, lines 2-25; 9<sup>th</sup> column, lines 6-9) at 25 degrees C (column 9, lines 13-15), (The Office interprets 25 degrees C to be "about 22 degrees C"),
- with Agrobacterium capable of transferring at least one gene (8<sup>th</sup> column, lines 57-63) to tissue to produced an infected embryo,
- culturing the infected embryo after cocultivation on a medium comprising an antibiotic (9<sup>th</sup> column, lines 14-16), and glucose (13<sup>th</sup> column, lines 4-7),

- culturing resulting tissue on medium comprising and antibiotic and a selective agent (16<sup>th</sup> column, lines 5-9).
- Hansen further teaches Type II callus (5<sup>th</sup> column, lines 15, 16), and regenerating plants from embryos (16<sup>th</sup> column, lines 10-16).

Accordingly Hansen anticipates the claimed invention.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 35, 38, 39, 40 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen, G. (US # 6,162,965) filed June 2, 1997, issued December 19, 2000, as applied to claims 35, 38, 39 and 40, and further in view of Applicant's admitted prior art.

The teachings of Hansen are discussed *supra*.

Hansen does not teach a cocultivation temperature range of 19 C temperature. However, Applicants admitted prior art (specification, page 15, 1<sup>st</sup> paragraph) shows that cocultivating at 19 degrees C temperature results in increased transformation. One skilled in the art would have been motivated, at the time of the invention was made, to

Art Unit: 1638

substitute for the 25 C temperature of Hansen, with the 19 degree C temperature of Applicant's admitted prior art, to increase transformation efficiency, with a reasonable expectation of success. Accordingly, the claimed invention is *prima facie* obvious in view of the prior art.

11. Claims 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen, G. (US # 6,162,965) filed June 2, 1997, issued December 19, 2000, in view of Holton (US 5,948,955; issued September 7, 1999, PCT pub date Dec 8, 1994).

The teachings of Hansen are discussed *supra*. Hansen does not teach the use of Agrobacterium 0.5 to 5 days after rescue from frozen glycerol stocks. Holton teaches transformation using Agrobacterium one day after rescue from frozen glycerol stocks (column 11, lines 27-35), prior to cocultivation. One of ordinary skill in the art would have been motivated to use Agrobacterium one day after rescue from frozen glycerol stocks as this appears to be standard protocol for use of Agrobacterium, evidenced by Holton. Accordingly, the claimed invention is *prima facie* obvious in view of the prior art.

12. Claims 35, 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen, G. (US # 6,162,965) filed June 2, 1997, issued December 19, 2000, as applied to claims 35, 38-40 above, in view of Bhojwani, SS et al (Developments in Crop Science, vol 5, pp 24-41, 1983).

The teachings of Hansen have been discussed *supra*. Hansen does not teach the use of monosaccharides at a concentration of 5 g/L – 30 g/L.

Art Unit: 1638

Bhojwani states that monocots grow best on monosaccharides (pg 31, 2<sup>nd</sup> paragraph), and teaches plant growth media comprising the monosaccharide glucose at 20-50 g/L, as well as maltose and lactose (pg 31, 2<sup>nd</sup> paragraph). Therefore, one of skill in the art would have been motivated to substitute the disaccharide of Hansen with the monosaccharide of Bhojwani, for the purpose of growth enhancement for monocots such as corn, with a reasonable expectation of success. Accordingly, the claimed invention is *prima facie* obvious in view of the prior art.

13. Claim 42 is free of the prior art.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 35-42 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-8, 12, 15, 17-21, 29, and 31 of copending Application No. 09/203,679. The method as set forth in claim 35 of the instant application encompasses the method of claim 4 in '679. The

Art Unit: 1638

comprising language of claim 35 allows for the heat shock treatment. Accordingly, the species renders the genus obvious. Accordingly, the claims of the instant application are obvious in view of the claims of the '679 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

**REMARKS**

15. No claims are allowed.
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Georgia L. Helmer whose telephone number is 703-308-7023. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on 703-306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Georgia L. Helmer  
Patent Examiner  
Art Unit 1638  
April 29, 2002



Phuong Bui  
PHUONG T. BUI  
PRIMARY EXAMINER  
4/30/02